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AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (original) An apparatus, comprising:
an array of optical fibers;
at least one wavelength sieve/combiner that operates on discrete wavelength units; and
a first array of micro mirrors;
wherein said optical wavelength sieve/combiner is optically interposed between said array of optical fibers and said array of micro mirrors.

2. (original) The invention as defined in claim 1 wherein any wavelength within one of said discrete wavelength units is supplied to or received from the same beam position by said wavelength sieve/combiner.

3. (original) The invention as defined in claim 1 further comprising an array of micro lenses, one micro lens for each optical fiber in said array of optical fibers, said micro lenses being optically interposed between said array of optical fibers and said wavelength sieve/combiner.

4. (original) The invention as defined in claim 1 further comprising an array of collimators, one collimator for each optical fiber in said array of optical fibers, each of said collimators being attached to one of said optical fibers, said collimators being optically interposed between said optical fibers and said wavelength sieve/combiner.

5. (original) The invention as defined in claim 1 further comprising a first focusing system that focuses output beams from said wavelength sieve/combiner onto said first array of micro mirrors.

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6. (original) The invention as defined in claim 5 wherein said first focusing system comprises a lens.

7. (original) The invention as defined in claim 5 wherein said first focusing system comprises a prism.

8. (original) The invention as defined in claim 1 wherein said wavelength sieve/combiner comprises at least one thin film optical filter.

9. (original) The invention as defined in claim 8 wherein said at least one thin film optical filter is mounted on a substrate.

10. (original) The invention as defined in claim 8 wherein said at least one thin film optical filter is mounted on a glass substrate.

11. (original) The invention as defined in claim 8 wherein said at least one thin film optical filter is freespace suspended.

12. (original) The invention as defined in claim 8 wherein said at least one thin film optical filter passes a portion of all of the wavelengths incident upon it and reflects a portion of all of the wavelengths incident upon it, whereby a copy of the incident wavelengths is created.

13. (original) The invention as defined in claim 8 wherein said at least one thin film optical filter passes a portion of some of the wavelengths incident upon it and reflects a portion of some of the wavelengths incident upon it, whereby a copy of the incident wavelengths that a portion is passed for is created.

14. (original) The invention as defined in claim 1 wherein there is a plurality of said wavelength sieve combiners.

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15. (original) The invention as defined in claim 1 wherein there is a plurality of said wavelength sieve combiners and each of said wavelength sieve/combiners is formed from respective portions of a plurality of strips of thin film optical filters.

16. (original) The invention as defined in claim 1 wherein each of said at least one wavelength sieve/combiners is adapted to supply as output one beam for a discrete wavelength unit for each of a plurality of strips of thin film optical filters incorporated therein.

17. (original) The invention as defined in claim 1 further comprising at least one sensor for detecting light at at least a prescribed one of said discrete wavelength units

18. (original) The invention as defined in claim 17 wherein said at least one sensor is mounted on said at least one wavelength sieve/combiner.

19. (original) The invention as defined in claim 1 wherein at least one micro mirror of said array of micro mirrors can tilt around two axes.

20. (original) The invention as defined in claim 19 wherein each of said two axes are substantially orthogonal to the other.

21. (original) The invention as defined in claim 1 further comprising

a second array of micro mirrors;

wherein said optical wavelength sieve/combiner is also optically interposed between said array of optical fibers and said second array of micro mirrors.

22. (original) The invention as defined in claim 21 further comprising a focusing system that focuses output beams from said wavelength sieve/combiner onto said second array of micro mirrors.

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23. (original) The invention as defined in claim 5 further comprising:

a second array of micro mirrors, wherein said optical wavelength sieve/combiner is also optically interposed between said array of optical fibers and said second array of micro mirrors; and

a second focusing system that focuses output beams from said wavelength sieve/combiner onto said second array of micro mirrors.

24. (original) The invention as defined in claim 23 wherein said first focusing system and said second focusing system are different.

25. (original) The invention as defined in claim 23 wherein said first focusing system and said second focusing system are the same.

26. (original) The invention as defined in claim 1 wherein said apparatus is adapted to operate at least in part in a broadcast mode.

27. (original) The invention as defined in claim 1 wherein said apparatus is adapted to operate at least in part as a multiplexer.

28. (original) The invention as defined in claim 1 wherein said apparatus is adapted to operate at least in part as a demultiplexer.

29. (original) The invention as defined in claim 1 wherein said apparatus is adapted so that beams from said optical fibers are converging prior to encountering said at least one wavelength sieve/combiner.

30. (original) The invention as defined in claim 29 further comprising a prism optically interposed between said wavelength sieve/combiner and said array of micro mirrors.

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31. (original) An apparatus, comprising:

a sieve/combiner; and

an array of micro mirrors;

wherein said sieve/combiner is optically interposed between said array of micro mirrors and an array of optical elements at least one of which is adapted to supply an optical beam to said apparatus and at least one of which is adapted to receive an optical beam from said apparatus.

32. (new) The invention as defined in claim 1 wherein light travels between said sieve combiner and first array of micro mirrors only via a free space path.

33. (new) The invention as defined in claim 32 wherein said free space path includes at least one element from the group consisting of a mirror, a lens, and a prism.

34. (new) The invention as defined in claim 31 wherein light travels between said sieve/combiner and array of micro mirrors only via a free space path.

35. (new) The invention as defined in claim 34 wherein said free space path includes at least one element from the group consisting of a mirror, a lens, and a prism.

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